



Transport of sheep to slaughterhouses

Guidelines for drivers and other parties concerned



Efnisyfirlit

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This guide is a recommendation to follow but it is not a legal act. Therefore, it cannot be relied on in legal disputes.

1. Introduction

The aim of this guide is to promote good sheep transport practices by ensuring animal welfare and preventing the spread of sheep diseases during loading, transport and unloading at the slaughterhouse as well as by means of transport (proper washing and disinfection).

It is addressed to farmers, vehicle operators, carriers, transport organisers, keepers of animals in transport and sheep slaughterhouse personnel handling the unloading of animals. It was created both based on the binding provisions of Icelandic law in the field of animal welfare, including sheep and combating and preventing infectious diseases, as well as knowledge and scientific literature in this field and the experience of people who deal with this topic daily.

This guide also uses material from the "Guide to good practices for the transport of sheep" published by the European Commission (DG SANTE, 2017).

2. Structure of the guide

Transport involves several potential stressors that can adversely affect animal welfare. New and unknown environment, limited movement due to closure in small pens, sudden and unusual sounds, individual fitness for transport, exposure to unknown individuals, e.g., from another herd, temperature and humidity changes along with inadequate ventilation, and limited access to water affect the condition of the animals. The effects of all these factors depend on the familiarization of animals with transport and their condition, the nature of the journey and its duration. Improper handling and transportation can cause serious injury, physical and mental stress, immunosuppression, and metabolic disorders. This has an impact on performance, productivity, and profitability due to changes in body weight, hydration status and, consequently, the quality of meat from animals intended for slaughter.

The transport includes activities from preparing the trip to unloading the animals.

To facilitate the use of the guide in daily practice, it has been developed following the five stages of the journey:

1. Administrative issues,
2. Planning and preparation of the transport,
3. Animal handling and loading,
4. Travel,
5. Unloading animals.

Stages 2-5. should be performed in chronological order. Administrative issues are dealt with as a first step, as staff competence, training, etc. is important in almost all activities during animal transport. Each stage covers several aspects, and for each of them the guide also includes "**good practices**" in line with national legislation and "**better practices**" (going beyond the legal obligation).

In addition, **the Annex to the guide** provides a compendium of good and better sheep transport practices relating to vehicle design and animal welfare.

2.1. Definitions that apply to the guidelines

Animals - only sheep (*Ovis aries*)

Loading - begins when the first sheep leaves the pen (inside or outside) on the farm and moves towards the vehicle and ends when all sheep are in the vehicle (last animal loaded).

Unloading - ends when the last animal leaves the vehicle (at the destination).

Transport time - the time from loading to unloading the animals.

Good practices are defined as „Coordinated procedures and processes established to fulfil the requirements of legislation and regulations intended to protect animal welfare and to combat and prevent spreading of infectious animal diseases“.

Better practices (beyond the requirements of national legislation) are defined as „additional tips on how to improve procedures and operations, may exceed any legal aspect of the specified minimum requirement as well as improving animal welfare in various situations and with different procedures “.

2.2. Definitions based on national laws

Destination: The place where animals are taken from means of transport at the end of the journey.

Place of departure: A place where animals are first placed on means of transport.

Transport: The process of transporting animals from place of departure to the destination, including loading and unloading.

Transport equipment (vehicle): Animal transport equipment, such as wheeled transport equipment which either runs on its own power or is towed (means of transport).

Vehicle operator: A person who controls a means of transport (usually the driver).

Carrier: The person, company or individual who has the transport of animals as a business in whole or in part, regardless of whether the transport is on its own or that the transport equipment is rented or lent to others.

Transport time: Total transport time from loading of the first animal, time between places, breaks in driving, loading, and unloading of the last animal.

Transport organizer: An individual or legal entity that organizes the transport of animals and has, or transports, animals transported at their owner's expense or at the expense of a third party.

Keeper of animals in transport: The owner of animals or another person responsible for the care of animals during transport.

2.3. Laws and regulations

55/2013 – Act on animal welfare

1066/2014 – Regulation on welfare of sheep and goats

527/2017 – Regulation on welfare of animals during transport

25/1993 – Act on animal diseases and their prevention

911/2012 (EC 1099/2009) – Regulation on the protection of animals at the time of killing

674/2017 (EU 1069/2009) – Regulation laying down health rules as regards animal by-products and derived products not intended for human consumption

3. Administrative matters

3.1. Legal obligations regarding transportation of sheep to a slaughterhouse

3.1.1. Vehicle operator

The vehicle operator is the keeper of the animals during transport.

The vehicle operator is responsible for the safety and welfare of the transported animals.

3.1.2. Transport organizer

The organizers are responsible for the organization of transport. Before each trip, the organizers ensure that the animal welfare is not jeopardized at the various stages of transport and that current road and weather conditions are considered.

When transporting animals, it shall be ensured that Act No 25/1993 on animal diseases and their prevention, with subsequent amendments, and administrative instructions issued in accordance with them are respected. Vehicles traveling between farms and areas must be systematically cleaned and disinfected between trips to prevent the spread of infectious diseases.

In the case of slaughter of sheep, it is obligatory to clean and disinfect transport equipment when traveling between areas with different disease statuses. Transport equipment for sheep must at least be cleaned and disinfected at the end of the day, but more often if necessary. Sheep transport must also be organized regarding disease zones and zones borders so that clean and dry equipment is used in those zones that have a better disease status than other zones.

3.1.3. Carriers and slaughterhouses

Carriers are responsible for transport and to ensure that information on the schedule, execution, and completion of the journey for which they are responsible is always available. In the case of transport of animals for slaughter, the slaughterhouse must receive the above information if the carrier is private. Usually in Iceland the slaughterhouse plans the transport together with their own drivers.

When animals are transported (for) to slaughter, the slaughterhouse must ensure that it is always possible for MAST (Matvælastofnun) to obtain information about the carriers and the planned transport.

Carriers shall ensure that every vehicle used for transport of animals has a logbook (Diary of transport) which records:

1. Type, number and ownership of animals,
2. Place of departure,

3. Date and time of departure,
4. Venues,
5. Estimated duration of the planned trip,
6. Destination,
7. Timing when unloading is complete,
8. Date and place of disinfection, where applicable.

An example form for a logbook on transport is accessible on MAST's website.

Diary of transport shall be kept for 2 years and accessible to MAST when requested.

3.1.4. Transport equipment

Transport equipment, intended for transport of animals shall be inspected and approved by MAST, which issues a license for the use of the equipment in question for certain livestock species valid for 5 years at a time. A fee equal to the cost according to the tariff of the MAST shall be paid for inspection and control of transport equipment.

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4. Planning and preparation of the transport

4.1. Introduction

Good preparation and planning for the transport of sheep is one of the most important stages of the journey. This is the key to successful transportation of animals in accordance with legal regulations, best practice, high animal welfare standards and economic benefits. Proper planning supports efficient transport and is necessary to minimize risk arising from the possibility of inappropriate coordination of the activities of people involved in the different stages of transportation of animals to a slaughterhouse.

The complexity of the entire animal transport process requires a structured integration of all stages of transport in accordance with a specific set of goals, responsibility, and task monitoring. It is essential for carriers to supplement well-designed Standard Operating Procedures (SOPs) with contingency plans to deal with unexpected events and problems that may come up during transportation of animals to a slaughterhouse.

In addition to pressing issues directly related to welfare, planning should include animal health (biosafety), human health and safety and economic considerations. The importance of planning and preparation for transport has also been confirmed in national legislation and the completion of the planning section in the travel log is obligatory.

From an animal welfare point of view, the planning and preparation stage of transport includes the following:

- Travel planning,
- Preparation of the vehicle,
- Preparation of animals and equipment,
- Documentation.

4.2. Traveling plan

The journey of animals to the slaughterhouse should be as smooth and quick as possible to minimize the stress associated with it. The slaughterhouse should carefully plan to ensure the proper welfare of the sheep during all transport. As part of the planning of each trip, the consequences of delays, breakdowns or other unexpected situations should be identified to minimize the risk of damage to welfare during the entire transport

The trip should be planned and carefully prepared when the date and place of departure as well as the time of arrival at the destination (slaughterhouse) are known.

Travel plans should include written arrangements for the estimated duration of the transport, loading and unloading places, and rules of action in emergency situations.

In addition to the information contained in the Diary of transport, plans should also consider:

1. The course of the route and the approximate duration,
2. Analysis of the weather forecast,
3. The type of vehicle depending on the duration of the trip and weather conditions, the number of sheep.
4. Planned number of drivers,
5. Ensuring the availability of the vehicle at the place and time of departure.

4.2.1. Travel time

The duration of the journey must be carefully estimated and must consider the planned loading at the animal collection points (farms). The appropriate type of vehicle and its equipment should be selected depending on the length of the journey and in accordance with the user group and the number of sheep in the lot.

Plan the journey to avoid delays due to rush hour traffic, road works, route changes, glaze and snowfall or flooding.

4.2.2. Emergency plan

The main goal of the carrier is to deliver the animals on time and in good welfare conditions, despite the possibility of delays in road traffic. In practice, emergencies may arise even if the transport has been properly prepared and planned. The emergency plan is designed to assist the driver and carrier in ensuring the safety and welfare of the animals in an emergency.

Uninterrupted and effective communication between the driver and the place of loading and unloading must be ensured. The driver should have access to telephone numbers in advance for both the loading places and the place of unloading so that he can be informed and inform others about any changes in relation to the plan before and during the trip.

Thanks to the prepared contingency plan, the carrier will be able to respond effectively and reduce the impact of the delay or accident on the animals.

When a delay occurs, the welfare and safety of the animals should always be considered paramount. The driver is responsible for the comfort and safety of the animals and for ensuring the shortest possible travel time.

The driver should make every effort to minimize the delay and provide animals with access to water, shelter from adverse weather conditions and ensure the correct heating and ventilation needs.

In the event of major difficulties on the road (for example, caused by a road accident, the driver should ask for assistance from the police to be able to travel as quickly as possible past the road difficulties).

In the event of a mechanical failure of the vehicle, the cause of the failure should be determined, and the repair time should be estimated. If on-site repair is not possible or takes too long, arrangements should be made for another vehicle.

The best solution in this case would be to transfer sheep from one car to another. If this is not possible, the recommendations in the chapters of this guide regarding the unloading and loading of animals should be followed, ensuring the safety and welfare of the animals.

A copy of the emergency plan should be kept in the vehicle. The plan should be known and learned by every person involved in the transport during each trip. It should describe how to deal with unforeseen events and delays so that the animals do not suffer more harm. Delays can be the result of weather, traffic jams, road works, mechanical failures or plant closure (e.g. slaughterhouse). The emergency plan, in addition to the above issues, must contain information on where to allocate animals in emergency situations.

In an emergency, the emergency plan is implemented by the driver and / or carrier, whichever is the first to identify the emergency.

The emergency plan should include:

1. how constant contact can be maintained between the carrier and drivers,
2. how to contact the relevant services (police/veterinarian/MAST (Matvælastofnun),
3. a list of contact numbers of all parties involved,
4. how and where it is possible to get the vehicle repaired, if necessary,
5. how to unload the animals in emergency situations or when there are delays,
6. information on how and where it is possible to access water, feed and shelter for the animals if unforeseen delays happen,
7. information about other issues necessary to avoid animal suffering due to delays in transport.

4.3. Transport equipment

The design, maintenance, preparation, and operation of the vehicle are key factors ensuring high standards of animal health and welfare during the transport.

4.3.1. Air quality

Bad air quality is a major threat to animal welfare in the vehicle. That is why it is so important to ensure that the ventilation system is effectively maintaining conditions inside the vehicle at an appropriate level which not only complies with the legal requirements, but also the most advantageous for the transported animals. Adequate and proper ventilation systems are important as they travel irrespective of the distance, the weather conditions may change, causing different thermal loads of transported animals.

Ventilation systems can be free or forced. Free ventilation is common in vehicles used for short journeys (typically less than 8 hours), while forced ventilation systems are required for long journeys. The minimum intensity in a forced fan should not be less than 60 m³/h per 100 kg of live weight.

4.3.2. Vehicle construction and maintenance

4.3.2.1. Good practices for vehicle construction and servicing

- The materials used in the construction of the vehicle should be easy to clean.
- Follow cleaning procedures between trips. The interior surfaces of the vehicle must be smooth to minimize the risk of injuries and bruises of the animals and to make them easier to clean.
- Vehicle doors and equipment must be of a sufficient width to permit the freedom of movement of sheep to minimize injuries.
- It must be possible to always observe the animals from outside the vehicle, e.g., by opening the side flaps or the rear doors, ensuring that sheep do not escape.
- Vehicle exhaust fumes must not enter the cargo area with animals due to the risk of suffocation.
- The vehicle should be constructed in such a way that no animals can get stuck or injure themselves or other animals in the cargo area.
- Floors and sub floors should be designed to maximize traction and minimize slipping and falling over of animals. Grip solutions are mainly floor mouldings or grooves in the floor. If sheep slip or fall, identify the cause, and take the necessary corrective actions.
- Particular attention should be paid to multi-level means of transport. These types of vehicles should be properly designed, maintained, and managed to ensure the safety of animals and that animals on the upper tiers do not dirty the sheep on the lower tiers.
- Extra partitions inside the cargo area must be used when traveling in mountainous areas, in high traffic areas or when a small number of sheep are transported to avoid hitting walls and causing injuries. Partitions should also be used for the segregation of sheep when required/needed.
- During long journeys, the vehicle should be equipped with at least four temperature sensors on one deck. This is due to fluctuations in the temperature inside the vehicle depending on the zone where the sheep are present (the highest temperatures are likely to occur at the front of the vehicle on the highest deck; the lowest temperatures are likely to be recorded on the lowest deck of the vehicle).
- Necessary mechanical repairs (e.g., tire replacement) and periodic inspections must be carried out in a timely manner to avoid unplanned delays.
- Lambs and recently sheared sheep (up to 10 days after shearing) are sensitive to wind and must be transported in vehicles with a closed body or tarpaulin to protect against the weather conditions that can cause stress due to heat or cold. Recently sheared sheep may only be transported if their fleece is at least 7.0 mm (e.g., when it has grown back, or the sheep has been specially shorn).

Table 1. Minimum surface requirements for sheep during transport on land according to Regulation 527/2017.

Category	Weight (kg)	m ² / animal
Sheep sheared and lambs	< 55	0,2 – 0,3
	> 55	> 0,3
Un-sheared sheep	< 55	0,3 – 0,4
	> 55	> 0,4
Lamb-bearing ewes in the later stages of pregnancy	< 55	0,4 – 0,5
	> 55	> 0,5

4.4. Fitness of animals for transport

Each sheep should be checked for fitness for transport prior to loading, considering the specificity of the legal requirements. **Animals in advanced pregnancy (over 90%), postpartum or lambs up to one week of age should not be transported.**

Moreover, animals cannot be transported if they meet one or more of the following conditions:

- animals **experience severe pain when moving**, e.g., animals with broken limbs or pelvis,
- animals with **severe haemorrhages/bleedings, wounds**,
- animals that **are only able to stand up when forced or are not able to stand up at all (e.g., very weak, tired, or emaciated)**,
- lame animals to such an extent that they **put little or no strain on one of the limbs**,
- animals with **obvious severe circulatory or respiratory disorders**.
- animals with a **visible lack of coordination** (e.g., animals unable to maintain balance),
- blind animals.

Effective actions on the farm for sheep unfit for transport include:

- rest in a suitable place,
- providing shelter, feed, and water,
- veterinary care, if necessary,
- humane killing if necessary.

That the animals are familiar with each other is a critical point that may have an impact on **the welfare of the animals during the journey**. Animals that are familiar with each other should be kept in the same pen on the vehicle. Combining unfamiliar animals from different herds increases stress and can lead to aggression and fighting.

Another important consideration is the amount of water and feed animals receive before the journey. Fasting will reduce the contamination of animals during transport. However, it is important that fasting does not take too long, as starvation in animals lowers energy levels sharply, can lead to fatigue and dehydration during the journey, and **has a negative impact on meat quality (dry and dark meat)**.

Before transport, the keeper must consider appropriate feeding and watering if the animals must wait a long time for transport. **Feed must be kept away from animals for the last two hours before transport, but care must be taken to ensure that they always have access to water.**

If animals are intended for slaughter feed must be taken from them at least 6 hours before transport. If sheep are slaughtered within 12 hours of transport from the place of departure, the feed must be kept from them for at least 8 hours before transport.

4.4.1. Last steps before loading of animals

The animals should be divided into similar groups before starting the loading. Such groups should include animals of similar size and age and preferably the groups should be **the same groups that the sheep formed before transport**. This is important to minimize stress of sheep during loading / unloading and transportation.

Checking and writing down the individual ear-tag numbers of the animals that are to be transported is a very good rule and at the same time, prepare and fill out **diary of transport**.

5. Handling and loading of animals

5.1. Introduction

Loading is one of the most stressful moments for the sheep during transport. During loading, the animals are moved from the pens where they were kept, to the vehicle and loaded via a ramp or elevator. The stress experienced by animals is of physiological and psychological nature. The animal must make additional physical effort when entering the vehicle, while mental stress occurs because the animal moves from a known environment to a completely unknown, new place. Additionally, the animals are handled by unknown people.

To reduce the stress level during loading, there are two main points to consider:

- **first**, the internal structure of the stable and the ramps of the transport vehicle should facilitate the movement of animals. Poor design of loading and unloading equipment, along with inappropriate handling of animals, can lead to slips, falls, bruises and other types of injury, as well as increased stress levels for the animals, resulting in reduced meat quality and economic losses,
- **second**, brutal / inappropriate handling of animals should be avoided. It is therefore required that the personnel involved have experience in handling sheep as well as knowledge of their natural behaviour. Sheep are herd animals and have strong herd instinct, which is why they tend to move side by side. Sheep experience severe stress when in groups of less than five individuals. Therefore, transport of individual sheep is not recommended at all. Hence, vocalization and teeth grinding can be observed in sheep that suffer from the stress of isolation. There must be enough time for loading. Inappropriate handling and rushing are the most common cause of bruises in sheep.

5.2. Loading of animals – technical requirements

5.2.1. Good practices for loading facilities

- Loading areas must be prepared prior to transport.
- The side protection of ramps and passageways must be high enough so that animals cannot jump over them. These side protections should have small enough slots in their lower parts to prevent sheep from falling out or getting their limbs stuck or being injured.
- The ramp must have a non-slip surface.
- The slope of the ramp cannot be greater than 26 degrees, which means that the ramp can have a maximum height of 50 cm measured at 1 meter from the lower edge of the ramp.
- The width of the ramp should be wide enough to allow animals to move around in groups. Sheep are herd animals and have a strong herd instinct, therefore they tend to move side by side.
- The width of the loading dock must be at least the width of the transporting vehicle.
- The carrier must ensure that the ramp and the vehicle are properly connected and that any gap between the ramp and the vehicle is narrow enough to prevent any type of injury to the sheep during loading.
- In cases where the slope is more than 10 degrees, which is 17.6 cm high and 1 meter from the lower edge of the ramp, the ramps should have skirting boards to ensure that the animals are safe, and it is made easy for them to get on or off the vehicle.
- Lifts and upper decks should be equipped with barriers to prevent animals falling out or escaping during loading and unloading.
- A portable light source must be available when inspecting the vehicle at night or in conditions of insufficient lighting. Sheep should move from darker to lighter places.

5.2.2. Better practices for loading facilities

- **The height** of the side ramps and passage corridors should be at least 1.2 m, with no gaps that could injure the sheep or block their movement to their destination.
- **Structures made of durable materials** should be used to cover the gaps between the bottom of the loading ramp and the floor of the vehicle to prevent sheep from falling out, or their limbs getting stuck, or injured.
- **A layer of straw** could be placed on the surface of the loading ramp to increase traction and prevent the animals from falling over and stumbling. The straw should then be cleaned off and left at the farm.
- **The angle of the ramp** should be as small as possible (e.g., less than 10 degrees) and it is particularly recommended to reduce the angle of the inclination even further when unloading lambs. A way to reduce the angle of inclination is to extend the driveway by using a mobile ramp that can be an extension of the vehicle ramp.

5.3. Handling animals during their loading

5.3.1. Good practices for handling animals during unloading

Sheep are herd animals. They experience less stress in the presence of other familiar sheep. Groups of sheep should be handled as quietly and calmly as possible, to reduce stress and the risk of injury.

Sheep react nervously to danger and should be treated with sensitivity and without causing panic. Screaming, other loud noises and sudden movements should be avoided.

When sheep do not have enough space to move, they should not be dragged, prodded, pushed or excessively manipulated.

Make sure there are no objects on the ramp or anything else that the sheep are afraid of. If it is necessary to force sheep to move, it should be checked whether the construction of the equipment used for their loading is appropriate.

Animals should be moved from darker to lighter places as animals may hesitate to enter darker areas (in which case adequate artificial lighting should be used).

A person handling sheep during transport should carry out the necessary activities in a manner appropriate for sheep, minimizing stress, pain, or cuts. **In particular:**

1. Do not lift sheep by the head, ears, horns, neck, tail, legs or fleece.
2. Sheep should not be hit or kicked,
3. Check animals on the upper decks before lowering the vehicle roof,
4. Before using the hydraulic system, check both sides of the vehicle to prevent the animals from getting stuck.

5.3.2. Better practices for handling animals during loading

When dealing with animals, the sheep herd instinct should be used. Sheep have a strong instinct to follow other animals and have a so-called blind spot in their vision range that should be known and kept in mind for efficient sheep handling.

Flapping flags or plastic bags can be used to stimulate animals to move and to facilitate loading. This is a practical and useful method, especially for loading lambs.

While moving sheep practices should be applied which are beneficial to animal welfare, working conditions and profit.

6. The journey

6.1. Introduction

The longer the journey takes, the greater the risk of it having a negative impact on the welfare of the sheep. **There are three main issues that can have an impact on the welfare of sheep during transport. This impact increases with the length of the journey. These issues relate to the physiological condition of animals, their level of feeding, watering, and rest, as well as the ambient temperature.**

If animals are fit for transport and properly prepared for a well-planned journey, they are more likely to be in good condition when they reach their destination and will be able to recover quickly after unloading and a relatively short rest.

There is a positive relationship between driving skills and animal stress levels. Calm, smooth ride, as opposed to nervous and jerky, allows the animals to relax more during the journey. Moreover, scientific research has shown that aggressive driving style during transport not only measurably increases stress in animals, but also causes a significant decrease in the quality of meat obtained from them.

6.2. Driving a vehicle

Drivers play one of the most important roles when transporting livestock. They usually have sole responsibility for the welfare of the animals on the move. How drivers drive a vehicle, how much time they spend on animal welfare checks, and how well prepared they are to deal with emergencies all have a significant impact on the results of sheep transport.

While driving in a moving vehicle, all animals try to maintain balance and at the same time avoid contact with other animals. Animals may fall over if the driving style is not smooth. In addition, uneven driving adversely affects sheep welfare, increases stress and the risk of injury. The main effect of improper driving style negatively affecting animal welfare is the loss of balance. In sheep, an uneven, nervous driving style makes it necessary for the animals to constantly adjust their posture to maintain balance and avoid falling.

While the driver has total control of the vehicle, he has only partial control of the animals. Drivers must therefore compensate for this partial lack of control over the animals by using their knowledge of how the animals behave under certain driving conditions.

Transported animals put more pressure on their legs than the entire load on the wheels of the vehicle, and the animals will try to keep themselves standing at all costs. The more effort it takes for them to do so, the more stress they will experience.

Gentle braking helps keep the animals in a stable standing position without making them exert too much effort.

Rapid braking causes increased stress, which leads to discomfort and, consequently, worsens the quality of the meat obtained.

6.2.1. Good driving practices

Drivers should steer the vehicle smoothly, avoiding sudden manoeuvres or sudden braking, to minimize the unnecessary need for the animals to constantly adjust their posture to maintain balance and to prevent cuts, bruises, slipping and tipping over.

Drivers need to be aware of the difficulties of the conditions in which they work. There are very few drivers on the road who need more skill than those who transport animals. Animal transport vehicles have a high centre of gravity and a live load that is loose and not secured.

Avoid heavy braking.

You should aim at maximum **use of the throttle**.

Check that the **brakes and braking system are properly adjusted**.

Use **the engine or the retarder** (endurance brake), if equipped, to brake.

Drivers should call for help immediately when problems are encountered to avoid unnecessary pressure on themselves and the animals.

By following the procedures below, drivers will increase their chances of delivering the animals in good condition:

- start slowly and avoid sudden stops; sudden starts, entering bends at too high a speed, etc., may cause the animals to fall,
- keep the vehicle, loaded with animals, in constant motion, especially in the event of higher air temperatures. This will ensure a constant flow of fresh air to help keep the animals cool and to prevent the build-up of gases generated by their faeces.
- **schedule periodic breaks to check the welfare of livestock** (check if any animals have fallen, if any of them look sick, are cold or overheated),
- perform a security check of the vehicle during an inventory break; make sure that the bulkheads are in place and properly secured, the vehicle doors are securely closed etc.
- **be ready to immediately make decisions, obtain instructions or take actions regarding the animals if weather conditions change.**

6.2.2. Better driving practices

Driving quality should be monitored and recorded using accelerometers installed in the vehicles.

Drivers should minimize the time that animal trailers are left unattended, particularly when there is any possibility or significant risk of putting animal welfare in danger.

Drivers should avoid driving through cities during rush hour, if possible.

Drivers should demand the right of way in the event of delays due to road accidents. Priority should be given for the maintenance of animal welfare.

6.3. Control of the microclimate in the vehicle cargo space

Animals transported on long journeys may experience prolonged exposure to extremely hot or cold temperatures or extreme climate changes (for example crossing mountains), which can increase the stress caused by transport. The microclimate in a vehicle is a major determinant of animal welfare and can greatly increase the risk of heat stress - stress caused by low or high atmospheric temperature.

Therefore, special attention should be paid to:

- air flow in the vehicle's cargo space,
- travel speed,
- number, places, and conditions of planned stops,
- surface requirements of vehicle floors,
- sheep condition.

During the journey, the driver should be vigilant to notice any irregularities, carrying out the required checks on the animals and taking appropriate action if there is a problem with the livestock. Therefore, it is recommended to use frequent inspection stops during the journey, especially during long journeys. The temperature in the vehicle can be roughly checked by observing the panting of the animals (which indicates too high atmospheric temperature in the cargo space). Panting of animals can also be observed when the vehicle is overloaded (too many animals), or the vehicle is poorly ventilated. The huddling of sheep indicates that the animals are cold.

6.3.1. Good practices regarding the control of the microclimate in the vehicle cargo space

- **The temperature inside the vehicle** should not be below 5° C or above 30° C, with a tolerance of 5° C. This means that the temperature must always be between 0- and 35° C.
- **In hot weather**, avoid parking the vehicle in direct sunlight for long periods. Whenever possible, vehicles with open ventilation systems should be parked at a right angle to the wind direction and the ventilation slots should be left open to optimize air flow throughout the vehicle cargo space.
- Keep the animals **adequately ventilated** while the animals are in the vehicle cargo space.
- **In hot weather** never leave a trailer / semi-trailer with animals without the ventilation turned on and without an attendant nearby.
- **In hot weather, it is recommended to minimize the number of stops.** However, if it is necessary to stop, and if possible, the trailer should be parked in a shaded area that allows for free air flow, and the loading ramp should be open. Do not park near other vehicles due to possible airflow restriction and increased risk of disease transmission.

6.3.2. Better practices regarding the control of the microclimate in the vehicle cargo space

Temperature should be monitored in combination with humidity. This is possible thanks to the use of a temperature and humidity monitoring system that automatically calculates the Temperature and Humidity Index (THI). Such a temperature and humidity monitoring system should be installed in the cabin to facilitate work.

Drivers must always ensure an adequate level of ventilation, sufficient to ensure appropriate thermal conditions and air quality in the cargo space of the vehicle / trailer.

If animals show signs of overreaction to harmful gases such as lacrimation, nasal congestion, coughing, retching or visual disturbances, appropriate measures should be taken to minimize the effect of these gases on the animals by increasing ventilation or some other means of eliminating them. As a last resort, by removing animals from the vehicle.

6.3.3. Better microclimate practices in cold weather

Avoid the stress of cold and freezing winds in cold weather, especially with recently sheared sheep and lambs, and on long journeys. Immediate remedial actions when animals show signs of hypothermia include:

1. waiting with the loading of animals for better weather,
2. reducing the space available for animals if they have more than the required minimum, but still making sure that the sheep have at least the required minimum space.
3. protection of livestock against cold wind on cold days by regulating the opening of flaps or windows and the use of protective tarpaulins, considering the minimum ventilation requirements,
4. partial limitation of air movement in the vehicle using side guards; at the same time, care should be taken to maintain the required level of ventilation,
5. always load dry animals; transport of soaked animals may be fatal because of the cooling impact the wet fleece has on the body increased by the cold wind. Even the thick fleece of sheep does not protect them from penetrating wind, especially when the fleece is wet,
6. protection of animals from excessive exposure to freezing rain and sleet; such conditions can be fatal to animals; even a sheep's thick fleece does not protect an animal from cooling down when soaked in freezing rain,
7. If necessary and likely to be successful, warm up the vehicle in time before loading with the use of heaters, especially for young animals.

6.3.4. Better microclimate practices in hot weather

In hot weather, animals should always be checked for signs of overheating. To prevent animals from overheating during transport, the following steps should be taken:

1. **loading and transport of sheep** should take place in cooler times of the day, e.g., at night,
2. use **air-conditioned** vehicles,
3. **increase the space for one animal by at least 30%** (the decision to do so should be made before loading and considering the greater risk of the sheep losing balance while driving),
4. **water the animals** as often as possible,
5. increase ventilation,
6. **shorten the downtime**, if possible,
7. park the vehicle in the shade and with adequate air supply.

6.4. Caring for sick or injured animals during transport

Animals should be transported in such a way that the animals are constantly observed during the journey to ensure their safety and welfare. Short stops are also recommended to check their health and well-being directly. When animals are in multi-deck vehicles, which prevent the operators from having free access to observation, e.g., cameras installed can be helpful.

Sick or injured animals in the context of transport are divided into 3 categories:

- animals identified as sick or injured at the time of departure,
- animals identified as sick or injured during the journey,
- animals identified as sick or injured on arrival at the destination or at the stopping point of the vehicle.

Some individuals may fall into more than one of these groups. However, if the animals showed signs of illness or injury during the pre-departure inspection, they should not be classified as fit for transport and should not be loaded (see also 2.4 Fitness and preparation for transport). Animals identified at the destination (slaughterhouse) by the

animal welfare officer as sick or injured after the journey will be examined during the veterinary inspection (ante-mortem), and after being released for slaughter, they will be examined by the veterinarian at the slaughterhouse / post-mortem. In an emergency, the animals will be examined by a veterinarian called to the place of detention (breakdown or accident) of the vehicle.

Only activities related to animals identified as sick or injured during the journey will be discussed below. Identification may occur during routine travel breaks or special inspection stops. Animals may fall into one of the following categories:

- Animals that have fallen or have been trampled or injured, e.g., because of aggression, and have visible injuries or fractures,
- Animals with visible injuries, such as hernia, uterine prolapse, dislocation,
- Animals showing symptoms of overheating or cold and/or dehydration,
- Animals showing signs of disease or infection developing.

Such animals should be examined without undue delay and decisions on remedial action or treatment should be made promptly. Hence, in the event of identifying the above symptoms, it is necessary to contact a veterinarian for him/her to decide about further fate of the animals.

6.4.1. Good practices for the care of sick or injured animals during transport

The person driving a vehicle with animals must check the animals in the vehicle at regular intervals, especially during long journeys.

When checking animals, the driver must pay attention to:

- Sheep health and welfare,
- Any bruises, injuries, wet fleece, or lameness,
- Panting or trembling animals.

Incorrect transport conditions can be identified by contusions, wounds, wet fleece or lameness. While bruises can only be noticed after slaughter, wet fleece and lameness can be seen primarily during unloading.

Incorrect grouping of animals or inadequate housing conditions in a vehicle can be evaluated by the nature of the injuries. Particular attention should be paid to those individuals that remain lying down after turning off the engine of the vehicle (they may be injured or sick). This is because healthy and uninjured animals usually get up from the floor immediately after stopping the vehicle.

The adequacy of the atmospheric temperature in the vehicle can be judged by observing panting (which indicates that the temperature is too high). Panting may also be noted in cases of poor vehicle ventilation. On the other hand, tremors may indicate that the atmospheric temperature in the animal cargo space is too low.

Once stressed or injured sheep have been identified, the driver / attendant must provide or request assistance from a veterinarian as soon as possible.

If the wound or disease is so serious that the animal cannot complete its journey, for example if it cannot stand unattended, the animal must be killed and unloaded as soon as possible at an appropriate location as indicated by the veterinarian.

6.4.2. Better practices for caring for sick and injured animals during transport

The driver should be able to see each sheep, therefore the structure of the vehicle, the location of animals in the vehicle and the available space should allow this.

Drivers should check all sheep as soon as possible following unusual or difficult road or weather conditions during transport.

Specialist care must be given to weak, sick, or injured sheep that are still fit for transport. This could mean reducing journey times by taking them directly to an alternative destination, providing protection from extreme weather conditions, keeping them separate from stronger sheep and preventing them from being cold.

Keepers of animals in transport should have the necessary minimum knowledge of the most common injuries or diseases that animals may suffer during transport, and how to proceed in each case.

The transporter should document the results of the sheep inspections carried out during the journey.

In the event of finding sickness or death of a greater number of sheep during transport, MAST should immediately be informed, providing full information from points 1 to 6 of the Daily Transport, i.e., the number and owner of the animals transported, the place of loading and the time of departure and the estimated time of arrival to the planned destination. This is extremely important if there is a suspicion of serious infectious diseases in a given region.

6.5. Emergency situations

Emergency situations are unexpected and require a response. It is essential that the driver or other responsible person has an emergency response plan. The plan should include telephone numbers of; for example, a vet who can provide support and assistance.

6.5.1. Better practices regarding emergencies

In the event of a mechanical failure of the vehicle, the cause of the failure should be determined, and the repair time should be estimated. If on-site repair is not possible or takes too long, another transport vehicle should be arranged. All factors determining the length of time animals can safely remain inside a stationary vehicle should be considered, such as:

- weather (e.g., sheep will feel comfortable in a trailer for four hours in cool weather with low humidity; in extreme heat and high humidity, animals can experience heat stress quite quickly),
- age of the animals,
- time since the last watering and feeding,
- place of failure (e.g., national road, country road),
- time of day,
- animal safety at the current location.

If a road accident occurs, keepers of the animals should:

1. call the emergency number if the accident happened on the public road, or to other services if their help is needed. The operator of the emergency number should be informed about:
 - a. place of the event,
 - b. the fact that there are animals in the vehicle,

- c. animals leaving the vehicle and their status (e.g., their number, are they injured, etc.),
 - d. any other known threats.
2. get all animals off the road and collect them in a place as far away from traffic as possible.
 3. call an emergency contact person designated by the company; if your company has an emergency procedure in place, you must follow it. If there are no procedures, the carrier must be informed about the place of the accident, about injuries, the condition of the animals, the number of vehicles involved in the incident and whether the persons to aid are already on site,
 4. call other people identified in the company's emergency procedure. Such a procedure should contain at least the details of the company insuring the cargo and the vehicle as well as contact details for the destination. You should provide them with the same information as above,
 5. if the vehicle and / or the trailer are damaged and are not suitable for further driving, go to point 2,
 6. if the damage is minor, the trailer is operational and there are no injuries, take photos, note the addresses and names of witnesses and people involved in the incident.

7. Unloading of animals

7.1. Introduction

Unloading is a stressful situation for the transported animals due to the fast environmental changes. Unloading areas must be secured and accessible with wide and straight paths without obstacles all the way from the vehicle to the pens. Drivers and keepers of animals need to be aware that some animals may be tired after a long journey. Those animals need to be dealt with differently, so the animals are not exposed to more additional stress than is necessary.

The skills of unloading animals are like those necessary during loading. All sheep should be checked upon arrival to make sure they are in good shape and do not need immediate assistance. If necessary, consult your veterinarian immediately.

7.2. Preparation of unloading zones

7.2.1. Good practices regarding the layout of the unloading area

The ramp should have a non-slip, durable surface with panels or side rails of an appropriate height to prevent animals falling out or escaping during unloading.

The slope of the ramp cannot be greater than 26 degrees (which means that the ramp can have a maximum height of 50 cm, measured at 1 meter from the lower edge of the ramp). It is recommended to reduce the angle of inclination during unloading, especially for lambs. One way to reduce the slope of the ramp is to extend it.

Ramps with a slope of more than 10 degrees must be provided with skirting boards to prevent animals from stumbling.

The width of the unloading dock must be at least as wide as the transporting vehicle.

The driver must ensure that the ramp and the vehicle are correctly aligned with the unloading area, and that the gap between the ramp and the vehicle will not cause injury to the limbs of the sheep.

Vehicle unloading platforms should have barriers to prevent animals from falling out or escaping during loading and unloading.

7.2.2. Better practices regarding the layout of the unloading area

Because animals prefer to climb slightly uphill rather than descend downhill, it is recommended to keep lower angles of inclination (e.g., ramp, dock) during unloading.

The optimum angle of inclination for unloading all animals is zero degrees, therefore different methods should be used to obtain the lowest possible inclination angle (minimum height of the dock for each type of vehicle, elevator, etc.).

Structures made of durable materials should be used to cover the gaps between the bottom of the loading ramp and the floor of the vehicle to prevent sheep from falling out, or their limbs getting stuck or injured.

Make sure animals can see where they are going and avoid sharp turns when moving sheep, especially near the door of the vehicle from which they are unloaded.

The height of the protection of the side ramps and passage corridors should be 1.2 m, with no gaps that could injure the sheep or block their movement to their destination.

Ramps must be of sufficient width and slope to ensure the freedom of movement of the various groups of sheep.

Unloading areas should be equipped with a movable ramp with the possibility of an extension, thus improving the unloading procedure.

Turns in the unloading area should have rounded and smoothed corners to avoid injury to the animals and should be as wide as possible.

7.3. Handling animals during unloading

7.3.1. Good practices for handling animals during unloading

Give the animals sufficient time during unloading so that they can adapt to new situations (lighting, smells etc.). Attempting to rush the animals can cause injury and deteriorate welfare.

The animals should be unloaded in the same herd groups as the sheep made before being loaded into the vehicle and adapted to the size of the pens to which they are directed.

If an animal remains in the vehicle:

- **and the animal is not sick / injured or trapped**, check the reason for staying by gently stimulating and guiding the animal with cues, preferably from outside the vehicle,
- **and the animal is sick / injured**, trapped or still unable to move (generally similar criteria to those determining the unfitness of animals for transport), inform the official veterinarian or the person responsible for animal welfare (at the slaughterhouse) and wait for them to give commands on how to proceed.

Unload a vehicle with inadequate ventilation or other faults as quickly as possible.

Efforts should be made to reduce the delay of unloading to less than one hour, from the arrival of the vehicle before animals are placed in pens or killed.

If an animal needs protection against further attacks by other animals, it should be ensured that such an animal is kept by itself in a small pen.

7.4. Caring for animals after unloading

Unloading sheep can cause severe stress and discomfort. In such a situation, it is important to provide appropriate care for the animals, especially if they have been permanently injured during transport.

7.4.1. Good animal care practices after unloading

At the place of destination, the driver should leave all the necessary documents for the transport of sheep together with the animals. Slaughterhouses usually have specified procedures on where drivers should leave transport documents.

The welfare of each batch of animals must be systematically checked by a welfare officer to identify priorities, to identify which animals have specific welfare needs and to take the necessary actions.

Animals must have access to water and feed, except when they are unloaded at a slaughterhouse for slaughter, which shall be as soon as possible.

Tired, injured, or sick animals in solitary pens should be given visual and auditory contact with their group or with another individual, as separating sheep from groups is stressful.

When it is necessary to kill a sheep because of an emergency, it must be done quickly, safely, and humanely.

An employee responsible for animal welfare at a slaughterhouse (animal welfare officer) must have a certificate of competence in this area, in accordance with Regulation EU 1099/2009.

The slaughter of animals due to injuries and diseases identified during unloading must be carried out by qualified personnel (certificate of competence) using the slaughter methods specified in Regulation EU 1099/2009.

7.4.2. Better animal care practices after unloading

An employee responsible for animal welfare (animal welfare officer) must check the welfare of the animals during unloading and make and keep a note of this inspection.

Humane killing should be performed in the presence of a minimum number of people to avoid distraction.

Sheep should be handled gently and carefully so as not to expose them to unnecessary stress or anxiety.

7.5. Cleaning and disinfection of transport facilities

Adequate hygiene of the means of transport used for transporting animals is an extremely important factor in preventing the spread of infectious diseases caused by prions, viruses, bacteria, and parasites. For this purpose, it is necessary to properly wash and disinfect the vehicle, which must be carried out without undue delay, immediately after its unloading of animals.

7.5.1. Good practices for cleaning and disinfecting the vehicle

Before washing and disinfection, manure should be removed and transported to the manure storage area. The load compartment in the vehicle should preferably be cleaned with hot water at high pressure (> 70 bar).

The cleaner should wear waterproof protective clothing during cleaning.

Walls and barriers in the cargo area that are clean but still damp should be disinfected using authorized disinfectants.

Adequate amounts of hot and cold water, detergents and disinfectants should be available in the area where vehicles are washed and disinfected to clean as many vehicles as can be parked at any given location on any given day.

The area where vehicles are cleaned and disinfected should be free of any obstacles within 2 meters around the vehicle. Adequate lighting must be available at night.

In places to be cleaned, 400 lux lighting should be provided at the height of the objects to be cleaned.

Washing and cleaning equipment as well as washing and disinfecting agents should be stored safely and protected against the effects of the weather.

The upper decks of the vehicle must be cleaned first.

The driver must document each cleaning / disinfection, indicating the names of the agents used and the amounts used, and keep this documentation (cleaning and disinfection book) in the vehicle.

7.5.2. Better practices for cleaning and disinfecting the vehicle

The washing station should be big enough to accommodate the vehicle and trailer used for the transportation of sheep. The washing station should be sheltered from wind and harsh weather conditions and the slope of its floor should be 5 to 7%, which allows for proper drainage of sewage to the collector.

There should be a checklist on the vehicle containing the main points of proper washing of the vehicle, water quality, approved washing and disinfection program applied, control method using indicators of cleaning and disinfection correctness, corrective actions taken, approved detergents used and disinfectants.

Standard Operating Procedure (SOP) for cleaning and disinfection should be available and applied at unloading areas.

Special care is needed to clean the tires and undercarriage of the vehicle, especially before going to disease-free areas.

An external lift or platform should be available to allow exterior cleaning of the upper parts and the roof of the vehicle.

Proper washing of means of transport for transporting animals should consist of the following stages:

1. Washing loading surfaces and wheels,
 - a. mechanical removal of litter and manure (in accordance with EC regulation 1069/2009, material CAT II),
 - b. washing with detergent,

- c. high-pressure rinsing,
- d. disinfecting surfaces before they dry,
2. Washing and disinfection of external surfaces of vehicles,
3. Disinfecting the cabin.

Also, disinfection of suits, footwear and equipment used during transport, by drivers and their assistants, should be carried out.

8. Annex – Compendium of knowledge on good and better practices in the transport of sheep

8.1. Good practices

8.1.1. Vehicle structure

1. The means of transport should be constructed in such a way:
 - a. as to avoid injury and suffering and to ensure the safety of the animals.
 - b. as to protect the animals from severe weather conditions, extreme temperatures and changing climatic conditions.
 - c. that it is easy to keep clean and disinfected.
 - d. as to prevent the animals escaping or falling out and to withstand the pressure caused by movement during transport.
 - e. as to ensure access to animals for inspection and care.
 - f. that it has a non-slip floor surface.
 - g. that it has a floor that prevents leakage of urine and faeces.
 - h. to provide sufficient lighting for the control and care of the animals during transport.
 - i. that adequate space is provided inside animal compartments and at each level of the means of transport to allow adequate ventilation of the animals in a natural standing position without restricting their natural movement in any way.
2. The dividing elements are strong enough to withstand the weight of the animals. The installations are designed to operate quickly and easily.
3. Means of transport is clearly and visibly marked to show the presence of animals.
4. Means of transport have appropriate equipment for loading and unloading.
5. Loading and unloading facilities, including floor areas, are constructed in such a way:
 - a. to prevent injury to and suffering of the animals and to minimize agitation and pain during animal movements, and to ensure the safety of the animals. In particular, the surfaces are not slippery and side protection is provided to prevent animals from escaping.
 - b. can be cleaned and disinfected.
6. The slope of the sheep ramps does not exceed: 26 degrees, about approx. 50% to the horizontal plane.
7. Where the slope is more than 10 degrees, representing 17.6% to the horizontal plane, the ramps is fitted with hoof stops to ensure that the animal is safely and easily ascending or descending.
8. The lifting platforms and upper floors are equipped with barriers to prevent animals from falling out or escaping during loading and unloading.

8.1.2. Welfare of transported animals

1. Transported animals must be fit for transport.
2. The flooring of the vehicle should be slip free and comfortable for the animals to stand or lay on. It should be constructed in a way to ensure that faeces and urine does not accumulate.
3. For loading and unloading the animals, appropriate auxiliary devices, such as bridges, ramps or gangways, with non-slip floor and, if necessary, side protection, should be used.

4. During loading, animals should not be hit, kicked, or subjected to unnecessary pain or suffering by applying pressure to any part of the body. Neither should they be pulled on the fleece, or picked up by mechanical means on the head, horns, or limbs. It is also forbidden to use electrical prods or other tools with pointed ends.
5. Animals of significantly different sizes and ages should be separated during transport; sexually mature males from females; animals with horns away from animals without horns; animals hostile to each other.
6. There should be an adequate minimum size of a loading area in the means of transport for the number of animals transported.
7. Adequate ventilation is to be provided to meet the needs of the animals, considering the number and type of animals transported and the weather conditions during the journey.
8. The transport time to a slaughterhouse must not exceed 10 hours.

8.2. Better practices

8.2.1. Vehicle structure

1. The means of transport must have a ventilation system designed so that throughout the journey, whether the vehicle is in motion or not, the temperature is kept between 5 ° C and 30 ° C inside the vehicle for all animals, with a tolerance of +/- 5 ° C depending on the outside temperature.
2. The ventilation system must ensure proper air distribution with a minimum air flow with a nominal capacity of 60 m³/h / 100 kg bodyweight of load capacity and can work for at least 4 hours, regardless of the vehicle's engine.
3. The means of transport should have a temperature control system as well as sensors recording the temperature measurement results. The sensors must be in the parts of the vehicle which, depending on their design, will be most exposed to the worst climatic conditions.
4. The means of transport should have an alert system to notify the driver when the temperature in the animal enclosure reaches a certain maximum or minimum.
5. The means of transport should be equipped with an appropriate navigation system capable of transmitting and recording information equivalent to that specified in the driver's logbook and information regarding the opening / closing of the tailgate.
6. The means of transport should be inspected by MAST.

8.2.2. Welfare of transported animals

1. The necessary steps should be taken to minimize the length of the journey and to meet the needs of the animals during the journey.
2. Transport should be carried out without delay to the place of destination and animal welfare conditions should be regularly inspected and kept at an appropriate level.
3. The means of transport should be marked with a sign saying: TRANSPORT OF ANIMALS in a way it is visible to other road users.
4. Transporters, drivers, and animal keepers must have adequate knowledge of animal welfare and sufficient knowledge of the control of contagious diseases in sheep.